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Tropheryma whipplei in Senegal

H. Bassene[1], A.K. Keita[2], O. Mediannikov[1], G. Diatta[1], C.S. Sokhna[1], A. Tall[3], D. Raoult[2], F. Fenollar[2,*]

[1] *IRD -URMITE, Dakar, Senegal*
[2] *IHU Méditerranée Infections, Marseilles, France*
[3] *Institute Pasteur de Senegal, Dakar, Senegal*

Background: *Tropheryma whipplei*, the agent of Whipple's disease, was still recently considered as a rare bacterium causing a rare chronic disease, mainly in white male of 50 year-old. In fact, *T. whipplei* is highly frequent in rural Senegal with a prevalence reaching 75% in feces of children of less than 5 year-old. Preliminary data suggested also a role of *T. whipplei* in febrile patients. This study aimed to analyze the epidemiology of *T. whipplei*.

Methods & Materials: From June 2010 to March 2012, a prospective study was conducted on 2,024 blood specimens from febrile patients of 5 different areas in Senegal and 400 non-febrile individuals from 1 of this area. Quantitative real-time PCR targeting *T. whipplei* was performed. In parallel, an epidemiologic survey was performed in the Sine-Saloum area to compare 5 households with a high prevalence of *T. whipplei* to 3 others where it has never been detected in order to detect risks factors. The presence of *T. whipplei* was also analyzed using specific PCR in 1,002 environmental samples (dusts from households, feces from pets, and arthropods).

Results: Overall, the prevalence of *T. whipplei* bacteremia was 2.8% in febrile patients; only 1 individual without fever was slightly positive. Its prevalence was the highest (4.7%) in the Sine-Saloum area. Besides, in August 2010, an outbreak has been detected in this area involving 26 patients out of 42 sampled at this time (61.9%). *T. whipplei* genotyping has allowed the significant detection of the same unknown genotype in these patients. Finally, the only significant difference noted between the households was the lack of toilets in the concessions where the prevalence was high (1/5 vs. 3/3 vs; p = 0,01). Among all environmental samples, only 4 were slightly positive.

Conclusion: *T. whipplei* is an agent of fever in Senegal. Currently, humans are the main reservoir and source of *T. whipplei* identified in these populations. The only strongly associated risk factor for *T. whipplei* is the lack of toilet and its transmission is probably inter-human, either through fecal-oral or oro-oral routes depending of hygiene conditions.

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Are infants protected from measles: an examination of antibodies in mother/infant pairs in Tianjin, China

M. Boulton[1,*], J. Montgomery[1], B. Carlson[1], X. Wang[2], Y. Zhang[2]

[1] *University of Michigan, Ann Arbor, MI, USA*
[2] *Tianjin Centers for Disease Control and Prevention, Tianjin, China*

Background: China was targeted for measles elimination as part of the WHO's Western Pacific Region elimination plan. Despite control efforts, sustained levels of transmission presented challenges to accomplishing this. In a collaboration to better understand measles susceptibility in Tianjin, China, the University of Michigan and the Tianjin Centers for Diseases Control have conducted a population-based cross-sectional study throughout the municipality.

Methods & Materials: We interviewed and drew dried blood spots (DBS) from a systematic random sample of 2406 people, including 693 mother/infant pairs. The DBS were tested for measles IgG to determine measles susceptibility.

Results: Most mothers (84%) had a positive IgG result, but most infants aged < 8 months (79%) had a negative IgG result. Among infants age 2 months 33% had a positive IgG test, while only 10% of infants age 3 months had a positive IgG test. Immunization for measles is provided (free of cost) at age 8 months in Tianjin. Among infants age 8 months, 71% had negative IgG. IgG response in infants age 9-11 months was improved (95% IgG positive).

Conclusion: While the waning of maternal antibodies in infants is well-documented, we found evidence that this may be occurring at a younger age than previously documented. This could have major ramifications for measles elimination programs throughout China and perhaps globally.

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